**DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION**
Interim Final 2/5/99

**RCRA Corrective Action**
**Environmental Indicator (EI) RCRIS code (CA750)**
**Migration of Contaminated Ground Water Under Control**

**Facility Name:** **Walker Heat Treating**
**Facility Address:** **10601 Briggs Road, Cleveland, OH 44111**
**Facility EPA ID #:** **OHD 004 197 307**

1. Has **all** available relevant/significant information on known and reasonably suspected releases to the ground water media, subject to Resource Conservation and Recovery Act (RCRA) Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

__X__ If yes - check here and continue with #2 below.
_____ If no - re-evaluate existing data, or
_____ If data are not available, skip to #8 and enter "IN" (more information needed) status code.

**BACKGROUND**

Walker Heat Treating, owned and operated by Hi TecMetal Group (HTG) since 1988, performed thermal hardening of steel using molten salt baths. Barium chloride was used in the salt baths until approximately January 2000. Between 2000 and July 2005, after use of the molten salts was discontinued, potassium nitrate, sodium nitrate, and sodium nitrite were used for heat treating. Currently, Walker Heat Treating offers vacuum heat treating of high-speed steel, die casting, plastic mold dies, stainless steel, tool steel and dies, copper alloys, gas nitriding, blast cleaning, and deep-freezing services. Primary customers include the automotive industry and several large die casting vendors.

The facility is undergoing closure of three unpermitted hazardous waste management units in accordance with the November 14, 2003 Consent Order, the RCRA Closure Plan approved on March 19, 2004, the Amended RCRA Closure Plan (ACP) approved on March 29, 2007, and the Revised Compliance Ground Water Monitoring Program Plan approved on April 25, 2008. A Work Plan for Bioremediation Injections was approved on October 4, 2017 to enhance reductive dechlorination of the contaminant plume along the downgradient property boundary. Per the ACP, the facility is required to operate a compliance ground water monitoring program in accordance with Rules 3745-54-90 through 3745-54-100 of the Ohio Administrative Code (OAC).

Analysis of potential risk exposure pathways has determined that the drinking water ingestion pathway is incomplete due to the area lying within the City of Cleveland's Urban Setting Designation (USD). This designation imposes potable use restrictions on ground water and supports a local ordinance requiring that all residential and commercial buildings within the City of Cleveland obtain their water supply from City of Cleveland Division of Water. This conclusion is further supported by a review of Ohio Department of Natural Resources water well drilling records that did not identify any potable water supply wells within one-half mile of the site. The discharge of contaminated ground water to surface water also was not identified as a complete exposure risk pathway. The nearest surface water bodies include Countryman's Creek to the west (1,200 feet) and south (1,500 feet) and Big Creek to the southeast (1,500 feet). Ground water flow maps do not include a flow component in these directions and suggests that discharges from the site to these surface waters are unlikely. A review of satellite imagery and U.S. Geological Survey topographic maps could not identify any discernable surface water bodies between the facility and Lake Erie which is located approximately 2-3/4 miles to the north and serves as the regional base level for drainage. The area is heavily urbanized and surface drainage is captured by storm sewers. The low hydraulic conductivity of sub-surface lithologic units and distance to Lake Erie support the conclusion that contaminants in the saturated zone on-site will not discharge to surface water and do not pose a threat to ecological receptors.

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Two potentially complete exposure pathways identified on-site include vapor intrusion (VI) and direct contact for construction workers due to the presence of chlorinated solvents in the subsurface and the shallow depth to ground water that is observed less than 10 feet below the ground surface. On-site VI studies identified high concentrations of vinyl chloride (VC) in sub-slab vapor, but indoor air sample concentrations historically have been acceptable for a commercial setting. Direct contact for construction workers will be minimized by following a facility-approved Health and Safety Plan and future environmental covenant.

**Definition of Environmental Indicators (for the RCRA Corrective Action)**

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated ground water. An EI for non-human (ecological) receptors is intended to be developed in the future.

**Definition of "Migration of Contaminated Ground Water Under Control" EI**

A positive "Migration of Contaminated Ground Water Under Control" EI determination ("YE" status code) indicates that the migration of "contaminated" ground water has stabilized, and that monitoring will be conducted to confirm that contaminated ground water remains within the original "area of contaminated ground water" (for all ground water "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

**Relationship of EI to Final Remedies**

While Final remedies remain the long-term objective of the RCRA Corrective Action program, the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993, GPRA). The "Migration of Contaminated Ground Water Under Control" EI pertains ONLY to the physical migration (i.e., further spread) of contaminated ground water and contaminants within ground water (e.g., non-aqueous phase liquids or NAPLs). Achieving this EI does not substitute for achieving other stabilization or final remedy requirements and expectations associated with sources of contamination and the need to restore, wherever practicable, contaminated ground water to be suitable for its designated current and future uses.

**Duration / Applicability of EI Determinations**

EI Determinations status codes should remain in the Resource Conservation and Recovery Information System (RCRIS) national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

*Amended RCRA Closure Plan, Volume 1, Walker Heat Treating, 10601 Briggs Road, Cleveland, Ohio OHD 004 197 307, June 7, 2006, Revised December 18, 2006,* EDP Consultants, Inc.

*Amended Closure Plan Approval Letter, Hi TecMetal Group, Inc. – Walker Heat Treating, OHD 004 197 307*, Ohio EPA, March 29, 2007, with conditions.

*Documentation of Environmental Indicator Determination, RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA725), Current Human Exposures Under Control, Walker Heat Treating, 10601 Briggs Road, Cleveland, Ohio, OHD 004 197 307*, Ohio EPA, August 8, 2016.

*Revised Compliance Ground Water Monitoring Plan, Walker Heat Treating, 10601 Briggs Road, Cleveland, Ohio OHD004197307*, Compliance Technologies, Inc., Revised March 2008.

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2. Is **ground water** known or reasonably suspected to be **"contaminated"**[1] above appropriately protective "levels" (i.e., applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action, anywhere at, or from, the facility?

__X__ If yes - continue after identifying key contaminants, citing appropriate "levels," and referencing supporting documentation.

_____ If no - skip to #8 and enter "YE" status code, after citing appropriate "levels," and referencing supporting documentation to demonstrate that groundwater is not "contaminated."

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

Hazardous waste storage and disposal rule violations at this facility were discovered by Ohio EPA in April 2000. Waste barium salts (D005), trichloroethene (TCE; hazardous waste code F001), and 1,1,1-trichlorethane (F001) were disposed by dumping outside the rear of the building between 1981 and 1988. TCE was reportedly used for degreasing both inside and outside the building (EDP, June 7, 2006). TCE was regularly used at the facility and disposed to two sewer crocks (one in the Atmospheric Room and one in the Salt Bath Room) until about 2000. Concentrations of TCE in the sediment held in the bottom of the crocks were as high as 10,000,000 ug/kg in 2004. Barium chloride was used in the salt baths until approximately 2004 and also discharged to the sewer. Soil concentrations below the concrete floor of both the Atmospheric Room and the Salt Bath Room exceeded risk values but the risk of direct contact was determined to be negligible. On-site VI studies identified high concentrations of vinyl chloride in sub-slab vapor; however, indoor air sample concentrations for all constituents of concern (COCs) were either non-detect or met commercial standards. It should be noted that in the metal heat-treating business it is typical to maintain high rates of indoor air turnover. Site soils have been extensively characterized and significant quantities of contaminated media were removed by the facility and disposed as D005 hazardous waste between October 2000 and April 2002, and in April and November 2012. The excavated soils were replaced with clean soils. A small area near the chiller tower remains to be investigated. Potential exposure to site-related constituents of concern is discussed in greater detail in the *Environmental Indicator (EI) RCRIS code (CA725) Current Human Exposures Under Control* prepared by Ohio EPA in 2016.

Monitoring wells were installed between 2005 and 2007 to assess the impact of site-related activities on ground water quality. Contaminants were identified in ground water above performance standards and a compliance monitoring program was established. Current sampling data indicate that concentrations continue to exceed standards on site and future ground water monitoring is needed to track plume stability and any potential threat to human health and the environment.

Downgradient monitoring well MW-4 has the highest TCE concentration of the 16 on-site monitoring wells, with a high of 205 ug/L reported in 2014. Elsewhere on-site, notable organic concentrations include TCE at MW-3 (101 ug/L in June 2012) and VC at MW-5 (284 ug/L in April 2009). Concentrations of barium, while elevated in soils, are consistently below the Maximum Contaminant Level (2.0 mg/L) in ground water. Historically, the highest concentration of barium reported in ground water was in MW-05 in 2005 (1.39 mg/L). At the request of Ohio EPA, the facility performed an off-site investigation of shallow ground water in April 2016. Temporary wells at seven locations were used to collect shallow soil and ground water samples. The off-site investigation demonstrated that the organic plume has not migrated downgradient beyond the facility boundary to impact nearby residential and commercial properties. The May 2016 summary report concluded that off-site soil vapor and indoor air sampling were not warranted.

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriate "levels" (appropriate for the protection of the ground water resource and its beneficial uses).

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A permeable reactive barrier consisting of zero valent iron and various nutrients was installed by injection in April 2018 along the downgradient side of the property to encourage reductive dechlorination of the contaminant plume before it could leave the property. The treatment resulted in significant reductions in chlorinated solvents in MW-4 including 111-trichloroethane, 1,1-dichloroethane, 1,1-dichloroethene, cis-1,2-dichloroethene, and TCE which were reduced to non-detect for sampling events conducted in 2019 and early 2020. However, the concentration of vinyl chloride (VC) initially spiked at 510 ug/L (440 ug/L duplicate) in October 2018 following the treatment. In response to Ohio EPA concerns of elevated concentrations of VC in MW-4, temporary sampling points were used for screening purposes in May 2019 to assess the potential for an immediate off-site threat to human health and the environment resulting from the reductive dechlorination process in select areas downgradient of MW-4. This study identified no current VI risk to potential off-site receptors and concentrations of VC have since declined and were reported as non-detect in October 2019 and again in April 2020.

Installation of the permeable reactive barrier in 2018 has proven to be an effective treatment to destroy chlorinated solvents at the facility. Ground water monitoring of select wells will continue, and additional treatment will be considered if concentrations exceed performance standards in downgradient locations.

*Documentation of Environmental Indicator Determination, RCRA Corrective Action Environmental Indicator (EI) RCRIS code (CA725), Current Human Exposures Under Control, Walker Heat Treating, 10601 Briggs Road, Cleveland, Ohio, OHD 004 197 307*, Ohio EPA, August 8, 2016.

*Revised Compliance Ground Water Monitoring Plan, Walker Heat Treating, 10601 Briggs Road, Cleveland, Ohio OHD004197307*, Compliance Technologies, Inc., Revised March 2008.

*Remedial Action Plan for Bioremediation Injections at the Walker Heat Treating (WHT) Facility, 10601 Briggs Road, Cleveland (Cuyahoga County), Ohio*, Compliance Technologies, Inc., *(OHD004197307)*, September 29, 2017.

*Vinyl Chloride (VCL) Assessment for at the Walker Heat Treating (WHT) Facility, RCRA ID #OHD004197307,* Compliance Technologies, Inc., June 14, 2019.

*Work Plan for Bioremediation Injections at the Walker Heat Treating (WHT) Facility, 10601 Briggs Road, Cleveland (Cuyahoga County), Ohio*, Compliance Technologies, Inc., September 29, 2017.

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3. Has the **migration** of contaminated ground water **stabilized** (such that contaminated ground water is expected to remain within "existing area of contaminated ground water"[2] as defined by the monitoring locations designated at the time of this determination)?

    __X__ If yes - continue, after presenting or referencing the physical evidence (e.g., ground water sampling/measurement/migration barrier data) and rationale why contaminated ground water is expected to remain within the (horizontal or vertical) dimensions of the "existing area of ground water contamination"[2]).

    _____ If no (contaminated ground water is observed or expected to migrate beyond the designated locations defining the "existing area of ground water contamination"[2]) – skip to #8 and enter "NO" status code, after providing an explanation.

    _____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

Bedrock below the facility consists of competent shale that is encountered at depths ranging from 14 to 17 feet below the ground surface (bgs). Published vertical hydraulic conductivities for shale range from approximately $1 \times 10^{-11}$ centimeters per second (cm/s) to $1 \times 10^{-7}$ cm/s and support the conclusion that contaminants are unlikely to migrate downward.

The bedrock is overlain by fine-grained clay and silty clay that is in turn overlain by up to 6 feet of fill consisting of similar lithology. The saturated zone is observed at depths ranging from approximately 1 to 10 feet bgs. The unconsolidated unit is not a significant source of ground water and calculated rates of horizontal migration for the site are on the order of $10^{-7}$ cm/s which converts to a rate of approximately 1 foot per 10 years. Rates of flow may increase locally in coarser zones, along utility corridors, and in the fill. However, on a regional basis the water-bearing zone beneath the site is not believed to represent a significant migration pathway for contaminants and is not a source of useable water.

The extensive removal of soils between 2000 and 2002, and in 2012 can be expected to significantly reduce the leaching of contaminants from soils into ground water and further reduce the potential for migration of COCs off-site. Installation of the permeable reactive barrier in 2018 has proven to be an effective treatment to destroy chlorinated solvents along the downgradient property boundary. Off-site investigations conducted in 2016 and 2019 and historic ground water monitoring suggest that plume dimensions are stable and largely contained on-site. Downgradient ground water monitoring will continue, and additional treatment will be considered if contaminant concentrations exceed performance standards in the future.

*Amended RCRA Closure Plan, Volume 1, Walker Heat Treating, 10601 Briggs Road, Cleveland, Ohio OHD 004 197 307, June 7, 2006, Revised December 18, 2006,* EDP Consultants, Inc.

*Revised Compliance Ground Water Monitoring Plan, Walker Heat Treating, 10601 Briggs Road, Cleveland, Ohio OHD004197307*, Compliance Technologies, Inc., Revised March 2008.

[2] "existing area of contaminated ground water" is an area (with horizontal and vertical dimensions) that has been verifiably demonstrated to contain all relevant ground water contamination for this determination, and is defined by designated (monitoring) locations proximate to the outer perimeter of "contamination" that can and will be sampled/tested in the future to physically verify that all "contaminated" ground water remains within this area, and that the further migration of "contaminated" ground water is not occurring. Reasonable allowances in the proximity of the monitoring locations are permissible to incorporate formal remedy decisions (i.e., including public participation) allowing a limited area for natural attenuation.

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4. Does "contaminated" ground water **discharge** into **surface water** bodies?

_____ If yes - continue after identifying potentially affected surface water bodies.

__X__ If no - skip to #7 (and enter a "YE" status code in #8, if #7 = yes) after providing an explanation and/or referencing documentation supporting that ground water "contamination" does not enter surface water bodies.

_____ If unknown - skip to #8 and enter "IN" status code.

Rationale and Reference(s):

The nearest surface water bodies include Countryman's Creek to the west (1,200 feet) and south (1,500 feet) and Big Creek to the southeast (1,500 feet). Ground water flow maps do not include a flow component in these directions and suggests that discharges to these surface waters are unlikely. Additionally, a review of satellite imagery and U.S. Geological Survey topographic maps could not identify any discernable surface water bodies between the facility and Lake Erie which is located approximately 2-3/4 miles to the north and serves as the regional base level for drainage. The area is heavily urbanized and surface drainage is captured by storm sewers. The low ground water yield of subsurface lithology and physical distance to Lake Erie supports the conclusion that contaminants in the saturated zone on-site will not discharge to surface water and do not pose a threat to ecological receptors. Therefore, the discharge of contaminated ground water to surface water is not a complete exposure risk pathway.

5. Is the **discharge** of "contaminated" ground water into surface water likely to be "**insignificant**" (i.e., the maximum concentration[3] of each contaminant discharging into surface water is less than 10 times their appropriate ground water "level," and there are no other conditions (e.g., the nature, and number, of discharging contaminants, or environmental setting), which significantly increase the potential for unacceptable impacts to surface water, sediments, or eco-systems at these concentrations)?

   _____ If yes - skip to #7 (and enter "YE" status code in #8 if #7 = yes), after documenting: 1) the maximum known or reasonably suspected concentration[3] of key contaminants discharged above their ground water "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) provide a statement of professional judgment/explanation (or reference documentation) supporting that the discharge of ground water contaminants into the surface water is not anticipated to have unacceptable impacts to the receiving surface water, sediments, or eco-system.

   _____ If no - (the discharge of "contaminated" ground water into surface water is potentially significant) - continue after documenting: 1) the maximum known or reasonably suspected concentration[3] of each contaminant discharged above its ground water "level," the value of the appropriate "level(s)," and if there is evidence that the concentrations are increasing; and 2) for any contaminants discharging into surface water in concentrations[3] greater than 100 times their appropriate ground water "levels," the estimated total amount (mass in kg/yr) of each of these contaminants that are being discharged (loaded) into the surface water body (at the time of the determination), and identify if there is evidence that the amount of discharging contaminants is increasing.

   _____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

[3] As measured in ground water prior to entry to the ground water-surface water/sediment interaction (e.g., hyporheic) zone.

6. Can the **discharge** of "contaminated" ground water into surface water be shown to be "**currently acceptable**" (i.e., not cause impacts to surface water, sediments or ecosystems that should not be allowed to continue until a final remedy decision can be made and implemented[4])?

   _____ If yes - continue after either: 1) identifying the Final Remedy decision incorporating these conditions, or other site-specific criteria (developed for the protection of the site's surface water, sediments, and ecosystems), and referencing supporting documentation demonstrating that these criteria are not exceeded by the discharging ground water; OR 2) Providing or referencing an interim-assessment[5] appropriate to the potential for impact, that shows the discharge of ground water contaminants into the surface water is (in the opinion of a trained specialists, including ecologist) adequately protective of receiving surface water, sediments, and ecosystems, until such time when a full assessment and final remedy decision can be made. Factors, which should be considered in the interim assessment (where appropriate to help identify the impact associated with discharging ground water) include: surface water body size, flow, use/classification/habitats and contaminant loading limits, other sources of surface water/sediment contamination, surface water and sediment sample results and comparisons to available and appropriate surface water and sediment "levels," as well as any other factors, such as effects on ecological receptors (e.g., via bio-assays/benthic surveys or site-specific ecological Risk Assessments), that the overseeing regulatory agency would deem appropriate for making the EI determination.

   _____ If no - (the discharge of "contaminated" ground water cannot be shown to be "**currently acceptable**") - skip to #8 and enter "NO" status code, after documenting the currently unacceptable impacts to the surface water body, sediments, and/or ecosystems.

   _____ If unknown - skip to 8 and enter "IN" status code.

Rationale and Reference(s):

[4] Note, because areas of inflowing ground water can be critical habitats (e.g., nurseries or thermal refugia) for many species, appropriate specialist (e.g., ecologist) should be included in management decisions that could eliminate these areas by significantly altering or reversing ground water flow pathways near surface water bodies.

[5] The understanding of the impacts of contaminated ground water discharges into surface water bodies is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration to be reasonably certain that discharges are not causing currently unacceptable impacts to the surface waters, sediments or ecosystems.

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7. Will ground water **monitoring** / measurement data (and surface water/sediment/ecological data, as necessary) be collected in the future to verify that contaminated ground water has remained within the horizontal (or vertical, as necessary) dimensions of the "existing area of contaminated ground water?"

__X__ If yes - continue after providing or citing documentation for planned activities or future sampling/measurement events. Specifically identify the well/measurement locations, which will be tested in the future to verify the expectation (identified in #3) that ground water contamination will not be migrating horizontally (or vertically, as necessary) beyond the "existing area of ground water contamination."

_____ If no - enter "NO" status code in #8.

_____ If unknown - enter "IN" status code in #8.

Rationale and Reference(s):

Per the ACP, the facility is required to operate a compliance ground water monitoring program in accordance with Rules 3745-54-90 through 3745-54-100 of the OAC. Enforceable documents include the Amended Closure Plan approved on March 29, 2007, the Revised Compliance Ground Water Monitoring Program Plan approved on April 25, 2008, and the Work Plan for Bioremediation Injections approved on October 4, 2017.

Ground water sampling is conducted on a semi-annual basis as part of ongoing closure requirements. Wells MW-4 and MW-9 are used to monitor water quality along the downgradient property boundary. Ground water samples are analyzed using SW-846 test methods 8260 for volatile organic compounds and 6020 for select metals (barium, cadmium, chromium, and lead). A total of 16 wells are gauged to evaluate ground water flow directions. Additionally, wells MW-4 and MW-9 currently are being sampled for additional constituents to evaluate the effectiveness of the 2018 remedial injections per the *Work Plan for Bioremediation Injections at the Walker Heat Treating (WHT) Facility.*

The area downgradient of the facility is heavily urbanized, does not permit private water supply wells by code, and site-related contaminants of concern do not pose a current ingestion or VI exposure risk. Surface water is not a complete exposure pathway and will not be monitored. Closure of the RCRA unit and extensive soil removals conducted as part of this process will reduce the leaching of contaminants to the water-bearing zone and further reduce the potential for migration of COCs off-site. The remaining potential risk pathway, construction worker dermal contact on-site will be addressed through a health and safety plan included in the approved closure/post-closure plan and a future environmental covenant. Current analytical results indicate that contaminant concentrations in ground water continue to exceed performance standards on site and future sampling will be conducted to monitor plume stability and any potential threat to human health and the environment. Ohio EPA concludes that the migration of contaminated ground water is under control.

*Amended RCRA Closure Plan, Volume 1, Walker Heat Treating, 10601 Briggs Road, Cleveland, Ohio OHD 004 197 307, June 7, 2006, Revised December 18, 2006,* EDP Consultants, Inc.

*Amended Closure Plan Approval Letter, Hi TecMetal Group, Inc. – Walker Heat Treating, OHD 004 197 307,* Ohio EPA, March 29, 2007, with conditions.

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*Remedial Action Plan for Bioremediation Injections at the Walker Heat Treating (WHT) Facility, 10601 Briggs Road, Cleveland (Cuyahoga County), Ohio,* Compliance Technologies, Inc., *(OHD004197307),* September 29, 2017.

*Work Plan for Bioremediation Injections at the Walker Heat Treating (WHT) Facility, 10601 Briggs Road, Cleveland (Cuyahoga County), Ohio,* Compliance Technologies, Inc., September 29, 2017.

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8. Check the appropriate RCRIS status codes for the Migration of Contaminated Ground Water Under Control EI (event code CA750) and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (attach appropriate supporting documentation as well as a map of the facility).

__X__ YE - Yes, "Migration of Contaminated Ground Water Under Control" has been verified. Based on a review of the information contained in this EI determination, it has been determined that the "Migration of Contaminated Ground Water" is "Under Control" at the Walker Heat Treating facility, EPA ID # OHD 004 197 307, located at 10601 Briggs Road, Cleveland, OH. Specifically, this determination indicates that the migration of "contaminated" ground water is under control, and that monitoring will be conducted to confirm that contaminated ground water remains within the "existing area of contaminated ground water" This determination will be re-evaluated when the Agency becomes aware of significant changes at the facility.

_____ NO - Unacceptable migration of contaminated ground water is observed or expected.

_____ IN - More information is needed to make a determination.

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|---|---|---|---|
| Completed by: | (signature) | | Date 10/05/2020 |
| | (print) | Rich Kurlich | |
| | (title) | Geologist 3 | |
| Reviewed by: | (signature) | Sylvia Chinn-Levy | Date 10/05/2020 |
| | (print) | Sylvia Chinn-Levy | |
| | (title) | Environmental Specialist 2 | |
| Reviewed by: | (signature) | John Palmer | Date 10/05/2020 |
| | (pint) | John Palmer | |
| | (title) | Environmental Specialist 3 | |
| Reviewed by: | (signature) | Atiur Rahman | Date 10/05/2020 |
| | (print) | Atiur Rahman | |
| | (title) | Environmental Supervisor | |
| Manager: | (signature) | Rod Beals | Date 10/05/2020 |
| | (print) | Rod Beals | |
| | (title) | Environmental Manager | |

Locations where references may be found:
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